

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A three-dimensional image display device, comprising:

a display panel which ~~has~~comprises a plurality of pixel sections each of which includes an L pixel displaying an image for ~~the~~a left eye of a viewer and an R pixel displaying an image for ~~the~~a right eye of said viewer, said pixel sections being provided periodically in a first direction, ~~forming a left line segment and a right line segment wherein said line segments are perpendicular to a first direction; and~~

an optical unit that ~~consists of~~comprises a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels in different directions ~~different from each other~~ to make light emitted from R pixels incident to the right eye and light emitted from L pixels incident on the left eye ~~of a viewer~~ and to allow said viewer to recognize a three-dimensional image, and

wherein the lens pitch of said optical unit is less than 0.2 mm.

2. (currently amended): A three-dimensional image display device, comprising:

a display panel which ~~has~~comprises a plurality of pixel sections each of which includes a pixel displaying an image for ~~the~~a left eye of a viewer and a pixel displaying an image for ~~the~~a

right eye of said viewer, said pixel sections being provided periodically in a first direction;
~~forming a left line segment and a right line segment, wherein said line segments are~~
~~perpendicular to said first direction; and~~

an optical unit that ~~consists of~~ comprises a plurality of lenses that refract light emitted
from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in
different directions ~~different from each other~~ to make the light from different pixels incident to
the right eye and the left eyes of a viewer ~~eye~~ and to allow said viewer to recognize a three-
dimensional image, and

wherein when a normal distance between ~~the~~ a surface of said optical unit and a line
segment which corresponds to ~~the~~ a longest width in said first direction of ~~the~~ a three-dimensional
visible range from which said viewer can recognize the three-dimensional image is set to a
normal distance OD (mm),

wherein ~~and the~~ a lens pitch of said optical unit is set to L (mm),

wherein said normal distance OD is 350 mm or less, and

wherein said normal distance OD and said lens pitch L are set so as to satisfy the

following expression:-

$$L \leq 2 \times OD \times (0.000291).$$

3. (currently amended) A three-dimensional image display device, comprising:

a display panel which ~~has~~comprises a plurality of pixel sections each of which includes a pixel displaying an image for ~~the~~a left eye of a viewer and a pixel displaying an image for ~~the~~a right eye of said viewer, said pixel sections being provided periodically in a direction; and

an optical unit that ~~consists of~~comprises a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in different directions ~~different from each other~~ to make the light from different pixels incident to the right and left eyes of ~~a~~said viewer and to allow said viewer to recognize a three-dimensional image, and

wherein the lens pitch of said optical unit is 0.124 mm or less.

4. (currently amended) A three-dimensional image display device, comprising:

a display panel which ~~has~~comprises a plurality of pixel sections each of which includes a pixel displaying an image for ~~the~~a left eye of a viewer and a pixel displaying an image for ~~the~~a right eye of said viewer, said pixel sections being provided periodically in a direction; and

an optical unit that ~~consists of~~comprises a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in different directions ~~different from each other~~ to make the light from different pixels incident to the right and left eyes of ~~a~~a viewer and to allow said viewer to recognize a three-dimensional image,

wherein a shortest distance between a three-dimensional visible range, from which said ~~viewer~~ viewer can recognize the three-dimensional image and ~~the~~ a surface of said optical unit is set to ND (mm),

wherein ~~and the~~ lens pitch of said optical unit is set to L (mm),

wherein said distance ND is 213 mm or less-, and

wherein said distance ND and said lens pitch L are set so as to satisfy the following expression:

$$L \leq 2 \times ND \times (0.000291).$$

5. (currently amended): The three-dimensional image display device according Claim 1, wherein said pixel sections consist of two types of pixels that are ~~the~~ pixels for the right eye and ~~the pixel~~ pixels for the left eye.

6. (currently amended): The three-dimensional image display device according to Claim 1, wherein said optical unit ~~is~~ comprises a lenticular lens.

7. (currently amended): The three-dimensional image display device according to Claim 1, wherein said optical unit ~~is~~ comprises a fly-eye lens.

8. (currently amended): The three-dimensional image display device according to Claim 1, wherein said display panel ~~is~~ comprises a liquid crystal display panel.

9. (currently amended): The three-dimensional image display device according to Claim 2, wherein said pixel sections consist of two types of pixels that are ~~the~~ pixels for the right eye and ~~the pixel~~ pixels for the left eye.

10. (currently amended): The three-dimensional image display device according to Claim 2, wherein said optical unit ~~is~~ comprises a lenticular lens.

11. (currently amended): The three-dimensional image display device according to Claim 2, wherein said optical unit ~~is~~ comprises a fly-eye lens.

12. (currently amended): The three-dimensional image display device according to Claim 2, wherein said display panel ~~is~~ comprises a liquid crystal display panel.

13. (currently amended): The three-dimensional image display device according to Claim 3, wherein said pixel sections consist of two types of pixels that are ~~the~~ pixels for the right eye and ~~the pixel~~ pixels for the left eye.

14. (currently amended): The three-dimensional image display device according to Claim 3, wherein said optical unit comprises ~~is~~ a lenticular lens.

15. (currently amended): The three-dimensional image display device according to Claim 3, wherein said optical unit comprises a fly-eye lens.

16. (currently amended): The three-dimensional image display device according to Claim 3, wherein said display panel comprises a liquid crystal display panel.

17. (currently amended): The three-dimensional image display device according to Claim 4, wherein said pixel sections consist of two types of pixels that are ~~the~~ pixels for the right eye and ~~the pixel~~ pixels for the left eye.

18. (currently amended): The three-dimensional image display device according to Claim 4, wherein said optical unit comprises a lenticular lens.

19. (currently amended): The three-dimensional image display device according to Claim 4, wherein said optical unit comprises a fly-eye lens.

20. (currently amended): The three-dimensional image display device according to Claim 4, wherein said display panel comprises a liquid crystal display panel.

21. (previously presented): A portable terminal device, comprising the three-dimensional image display device according to Claim 1.

22. (previously presented): A portable terminal device, comprising the three-dimensional image display device according to Claim 2.

23. (previously presented): A portable terminal device, comprising the three-dimensional image display device according to Claim 3.

24. (previously presented): A portable terminal device, comprising the three-dimensional image display device according to Claim 4.

25. (Original) The portable terminal device according to Claim 21, wherein said device is any one of a cellular phone, a personal information terminal, a game machine, a digital camera, and a digital video camera.

26. (Original) The portable terminal device according to Claim 22, wherein said device is any one of a cellular phone, a personal information terminal, a game machine, a digital camera, and a digital video camera.

27. (Original) The portable terminal device according to Claim 23, wherein said device is any one of a cellular phone, a personal information terminal, a game machine, a digital camera, and a digital video camera.

28. (Original) The portable terminal device according to Claim 24, wherein said device is any one of a cellular phone, a personal information terminal, a game machine, a digital camera, and a digital video camera.

29. (Cancelled).

30. (currently amended): A three-dimensional image display device, comprising:
a display panel which ~~has~~ comprises a plurality of pixel sections each of which ~~included~~ includes a pixel displaying an image for ~~the~~ a left eye of a viewer and a pixel displaying an image for ~~the~~ a right eye of said viewer, said pixel sections being provided periodically in a direction, ~~forming a perpendicular line segment,~~ wherein a ~~said~~ viewer holds the three-dimensional image display device in hand and views the three-dimensional image while ~~he/she~~ said viewer moves;
and

an optical unit that ~~consists of~~ comprises a plurality of lenses that refract light emitted from said pixels,

wherein said optical unit refracts the light emitted from said pixels and emits the light in different directions ~~different~~ from each other to make the light from different pixels incident to the right and left eyes of a ~~said~~ viewer, respectively, and to allow said viewer to recognize a three-dimensional image, and

wherein the lens pitch of said optical unit is less than 0.2 mm.

31. (currently amended): A three-dimensional image display device, comprising:
a display panel which has a plurality of pixel sections each of which includes a pixel displaying an image for the a left eye of a viewer and a pixel displaying an image for the a right eye of said viewer, said pixel sections being provided periodically in a direction, wherein a said viewer holds the three-dimensional image display device in hand and views the three-dimensional image while ~~he/she~~ said viewer moves; and
an optical unit that ~~consists of~~ comprises a plurality of lenses that refract light emitted from said pixels,
wherein said optical unit refracts the light emitted from said pixels and emits the light in different directions ~~different from each other~~ to make the light from different pixels incident to the right and left eyes of a said viewer and to allow said viewer to recognize a three-dimensional image, and
wherein the perpendicular-normal distance from ~~a most peripheral line segment out of line segments at the~~ surface of said optical unit to the plane of the viewer's eyes, is set to a distance OD (mm);
wherein and the lens pitch of said optical unit is set to L (mm),
wherein said distance OD is 350 mm or less; and
wherein said distance OD and said lens pitch L are set so as to satisfy the following expression:

$$L \leq 2 \times OD \times (0.000291).$$

32. (new): The three-dimensional image display device according to Claim 2, wherein the lens pitch L of said optical unit is set to a first value, wherein the first value is less than or equal to twice the product of the normal distance OD multiplied by 0.000291.